Two countries divided by a common language: health systems in the UK and USA

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DECLARATIONS

Competing interests
None declared

Funding
None

Ethical approval
Not applicable

Guarantor
MD

Contributorship
MD and MM conceived the idea and drafted the paper which was subsequently revised by BR and MPC

Acknowledgements
None

Summary Despite the historic significance of the healthcare reform bill that was passed into law by President Obama in March 2010, the debate still rages. The UK National Health Service (NHS) has featured prominently in the current American debate on healthcare reform, with critics calling attention to its perceived shortcomings. Some of these, such as the existence of 'death panels', can easily be dismissed, but others, such as the cancer survival deficit, cannot. This paper reviews the evidence on outcomes from cancer and other chronic non-communicable diseases, the two leading causes of death in both countries. The headline figures showing better cancer survival in the USA are exaggerated by methodological issues, but a gap remains, due in large part to better outcomes among older people. Outcomes among younger people with chronic disease are, however, much worse in the USA. Paradoxically, given the nature of the debate in the USA so far, those parts of the US health system that get the best results, such as the Veterans' Administration, or the elderly on Medicare, are those that most closely resemble the British NHS – but which are funded somewhat more generously.

Introduction

Despite the historic significance of the healthcare reform bill that was passed into law by President Obama in March 2010, the debate still rages. Lawyers representing 13 US states have filed lawsuits challenging the constitutionality of the new legislation.[1] President Obama's call for healthcare reform has come under sustained attack from political opponents. A frequent criticism is that reform will lead to what is disparagingly termed 'socialized medicine'. Americans are warned that reform could create a healthcare system resembling that in the UK, in which, it is alleged, they will at best wait years for treatment, the treatment they do receive will be of poor standard, and they may even fall victim to bureaucrats who decide whether they will live or die (so-called 'death panels'). This view has been encouraged by some British commentators, including one Conservative politician who described the National Health Service (NHS) to an American audience as a '60-year mistake'.[2] One editorial even argued that 'people such as scientist Stephen Hawking wouldn't have a chance in the UK, where the National Health Service would say the life of this brilliant man … is essentially worthless' and that 'the British … (put) a price tag on human life, as (America) is about to'.[3]

So how do the health systems in the UK and USA compare? Americans certainly pay much more for healthcare, at $6719 per person in 2006, about three times as much as the UK.[4] Yet these very different amounts pay for similar numbers of doctors per 100,000 population (26 in the USA and 23 in the UK), but the UK has many more nurses

and midwives (128 and 94 per 100,000, respectively) and more hospital beds in relation to its population.

The key question is what those resources achieve. Life expectancy at birth in the USA is 78 years, the same as in Cuba and lower than in the UK (80 years). The UK once lagged behind the USA on death rates for causes amenable to medical care, but has overtaken it in the past decade, largely because of very limited progress in the USA.[5] Thus neonatal, infant and maternal mortality rates in the USA are now all higher than in the UK (Table 1). Yet there are areas where the USA seems to do better than the UK.[6] In particular, commentators cite evidence of longer survival from cancer in the USA. What is really happening and what are the implications for current debates in the USA and UK?

Cancer survival

Frequently-cited figures for cancer survival in the USA considerably outstrip those in the UK. For example, five-year survival for women diagnosed with breast cancer in 2000–2002 was 77.8% (95% CI [77.4–78.2]) in the UK, compared to 90.1% (95% CI [89.6–90.5]) in the US.[7] The EUROCARE-3 study found that, for women diagnosed with breast cancer during 1985–1994 in each of the nine states and metropolitan areas covered by the US National Cancer Institute's (NCI) Surveillance, Epidemiology and End Results (SEER) programme, five-year survival was higher than in any of the 22 European countries covered by the EUROCARE studies.[8]

The picture is more complicated than it seems, however. The SEER data were the only source of population data on cancer survival in the USA until 2008. They are known to be problematic, with participating cancer registries covering only 10% of the US population until 2000,[9] and underrepresentation of the poor and of African-Americans.[10] This is important. The recent CONCORD study, which covered 42% of the US population, revealed systematically and significantly lower cancer survival in African-Americans in all 16 states and six metropolitan areas included in the study, both in areas covered by the SEER programme and states covered by the National Program of Cancer Registries (NPCR). The pooled, age-adjusted estimate of five-year survival for breast cancer was 84.7% (95% CI [84.5–84.9]) for white women but only 70.9% (95% CI [70.0–71.8]) for black women, as big a difference as that between the USA and the UK. Survival for black women was consistently below the mean survival for the US population as a whole, and often more than three standard deviations below it. One factor may be insurance coverage, which African-Americans are more likely to be without and which has been shown to correlate with survival.[11] A further problem arises from the use, by the SEER programme, of US national life tables to estimate relative survival, which almost invariably produces estimates that are higher than those obtained with the more appropriate state- and race-specific life tables.

Racial disparities in cancer survival are not universal in the USA, however, and the exception is highly relevant to the current debate. The Veterans Administration (VA), which cares for those who have served in the military, has been likened to the British NHS, as a tax-funded, integrated delivery model. Among those treated for colorectal cancer within the VA system in 1987–1995, there was no significant difference in five-year survival between whites and blacks.[12] The VA system also delivered greater uptake of faecal occult blood testing (FOBT) (56% of men, 51% of women in the year before the 1998 Veterans Health Survey[13]) than was available to other Americans in the same year (21%),[14] as well as more endoscopic procedures and more intensive diagnostic work-up of symptoms and follow-up of abnormal laboratory results.

A key factor in differential survival is access to care, which is strongly correlated with insurance status and, in turn, race and income.[15,16] Survival from breast, colorectal and prostate cancer is highest in those who have private insurance, intermediate in those with federal insurance, and lowest in those with no insurance.[11] Where patients of different race have comparable access to care, the evidence suggests that their outcomes are similar. This has been summarized as 'equal treatment yields equal outcome, regardless of race'.[17,18] These views are consistent with the evidence that, once they have been able to access it, the quality of care provided to African-Americans in American hospitals is similar to that of whites.[19]

Nonetheless, overall cancer survival is higher in the USA than in the UK, even if the true gap is

Table 1
Health outcome indicators in the USA and UK

Measure	*USA*	*UK*
Life expectancy at birth – persons (years)[37]	78.2	79.4
Life expectancy at birth – boys (years)[37]	75.6	77.2
Life expectancy at birth – girls (years)[37]	80.8	81.6
Neonatal mortality rate (per 100,000) in 2006[38]	4.4	3.5
Infant mortality rate (per 100,000) in 2006[38]	6.7	5.0
Under-5 mortality rate (per 100,000) in 2007[38]	8	6
Breast cancer: age-adjusted 5-year relative survival (%) (2000–2002)[7a]	90.1 (95% CI [89.6–90.5])	77.8 (95% CI [77.4–78.2])
Lung cancer: age-adjusted 5-year relative survival (%) (2000–2002)[7a]	15.7 (95% CI [15.3–16.1])	8.4 (95% CI [8.1–8.6])
Prostate cancer: age-adjusted 5-year relative survival (%) (2001–2006)[7,22a]	99.3 (95%CI [98.9–99.8])	77.0 (95% CI [76.6–77.4])
All malignancies: age-adjusted 5-year relative survival (women) (%) (2000–2002)[7a]	62.9(95% CI [62.6–63.2])	52.7 (95% CI [52.5–52.9])
All malignancies: age-adjusted 5-year relative survival (men) (%) (2000–2002)[7a]	66.3 (95% CI [66.0–66.6])	4.8 (95% CI [44.6–45.0])
Diabetes: age-standardized death rate (per 100,000) in 2006 [37]	20.3	6.7

[a] For the USA – SEER program areas only (10–14% of US population); for the UK – England only (84% of UK population)

rather less than is often suggested. A complete explanation remains elusive, but two factors can be identified.

For some cancers, especially breast, colon and prostate, both the intensity of screening and the intensity of investigation of minor symptoms are much greater in the USA. The Commonwealth Fund reported that 85% of American women reported having had a cervical smear within the last two years while 84% of women aged 50–64 years reported having had a mammogram within the same period,[20] compared with 79.5%[21] and 75.9%,[22] respectively, in the UK. Earlier diagnosis may contribute to higher survival in the US from melanoma of the skin and breast and colorectal cancer. However, the main consequence of more intensive screening, especially for early-stage prostate cancer, where there is little evidence that treatment prolongs survival, is the introduction of lead-time bias and over-diagnosis. This leads to a situation where five-year survival from prostate cancer appears to be 99% (95% CI [98.9–99.8]) in the USA (2001–2006 diagnoses), compared with only 77% (95% CI [76.6–77.4]) in England (UK, 2001–2006),[7,22] although at least some of this difference is likely to be an artefact. This is also likely to be a factor in the higher breast cancer survival seen in the USA.

The second factor is age. Cancer survival among older patients in Europe is much lower than for younger patients, and this disparity with age is much greater than that in the USA.[24] Crucially, Americans over the age of 65 years become eligible for Medicare, a tax-funded insurance system providing universal coverage for this age group.

Chronic diseases

In contrast to the situation with cancer, outcomes for common chronic diseases such as diabetes, hypertension and chronic obstructive airways disease are much worse in the USA than the UK.[25] Diabetes provides a valuable lens through which to view healthcare delivery. Diabetes requires treatment for life but, given the effectiveness of treatment for both the disease and its complications, it is reasonable to argue that, in a modern industrialized country, death rates from diabetes among people under the age of 50 years should be close to 0. Yet they are very much higher in the USA than in the UK.[26] This is despite the observation that the proportion of people with diabetes apparently receiving recommended treatment was comparable in the USA and UK.[27] Many Americans have to pay the full cost of their medications, however, and they are more likely than those living in the UK to skip treatment because of cost.[28,29]

Two inter-related factors need to be considered in seeking to understand the poor performance of the USA for younger people with chronic diseases. The first is race, with much higher mortality from

conditions amenable to timely and effective care among African-Americans than those of European descent.[30] This is also true for complications of chronic disease: even after adjustment for age and the presence of diabetes, lower limb amputation rates are almost twice as high among African-Americans as among whites.[31]

As with cancer, however, racial disparities are not inevitable, even in the USA. Among diabetics over the age of 65 years who received all their care in the VA system, there was no racial disparity in the probability of having checks on the level of a marker of long-term diabetic control (HbA1c), but such checks were less likely for African-Americans than whites who used Medicare.[32]

The second is insurance coverage, which one in seven Americans now lack.[33] A comprehensive review by the Institute of Medicine concluded, somewhat intuitively from a European perspective, that those without insurance coverage for the costs of their healthcare often receive that care later, when complications have arisen.[34] Again, as with the racial divide, so with health insurance: once the uninsured are able to access care, the quality of care appears similar to that received by those who are insured.[35]

Conclusion

The simplest message that can be drawn from this brief overview is that the US and British systems of healthcare both have strengths and weaknesses. The USA achieves better outcomes than the UK among older people with cancer, although the differences may be smaller than is often reported. By contrast, outcomes among young people with chronic diseases are much worse in the USA than the UK. And the racial differences in outcome for cancer and other chronic diseases in the USA are at least as wide as the socioeconomic inequalities in Britain.

Beyond these simple comparisons lie some important lessons for policy. The USA spends three times as much per person on healthcare than does the UK. Even allowing for the higher transaction costs arising from multiple payers, the absence of pharmaceutical cost controls and the higher cost of malpractice insurance, the USA should be expected to achieve much better outcomes from treatable conditions than the UK. In some aspects, it does. Where individuals have access to this well-resourced healthcare system, as do all Americans over the age of 65 years, the results are good. Others are not so fortunate, and there are wide disparities associated with race and insurance status. Crucially, the VA, the sector of the American health system that most closely resembles the NHS, achieves some of the best outcomes, minimizing racial disparities. Resources also matter in the UK. It is noteworthy that the absolute decline in death rates from conditions amenable to healthcare was three times greater in the UK than in the USA between 1997–1998 and 2002–2003, a period during which the NHS was finally catching up with decades of under-investment.

These findings have implications for both countries. Some commentators have argued that the increased spending on the UK NHS in the past decade has achieved little.[36] That view is supported by measures of 'productivity', but these measures capture activity while ignoring outcomes. Outcomes in the UK, as measured by mortality amenable to medical care, have improved considerably, although there is still room for improvement with cancer outcomes at older ages, which still lag behind those in the USA. This suggests that, rather than seeking to preserve current levels of expenditure on the NHS, there is an argument for increasing them further. According to data collected by the OECD for 2007, the UK was still spending less on health than its European neighbours (8.4% of GDP compared with 9.8% in the Netherlands, 10.4% in Germany, and 11.0% in France).[37]

The message for the USA also challenges a commonly-held view. Many US commentators have condemned the healthcare reforms in the USA for creating something that might resemble the British NHS, but it is precisely those elements of the American health system that most resemble the NHS which achieve the best results. A more informed debate on healthcare reform in the USA may still be possible if comments on the British NHS avoided dismissing it simply because it represents 'socialized medicine'. Both countries can learn from one another but, as George Bernard Shaw once noted, too often 'England and America are two countries divided by a common language'.

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